Author’s response to reviews

Title: Comparative value of a simulation by gaming and a traditional teaching method to improve clinical reasoning skills necessary to detect patient deterioration: a randomized study in nursing students.

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Comparative value of a simulation by gaming and a traditional teaching method to improve clinical reasoning skills necessary to detect patient deterioration: a randomized study in nursing students.

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BMC Medical Education

Dear Mr. Edelbring

Thank you for your review of the above-mentioned manuscript. We greatly appreciate the reviewers’ evaluation of our manuscript. We thank the reviewers for their comments which have helped us to improve our manuscript. A point-by-point reply is provided. In the revised version, changes are highlighted in red.

We hope this revised version will be suitable for publication in BMC medical education. As the corresponding author, I remain at your entire disposal for any further information.

Sincerely,

Antonia Blanié
Editor Comments:

Dear authors,

Thank you for submitting your work to BMC Medical education.

Please carefully note both reviewers’ comments and concerns, which should be addressed in full.

R: We thank the Editor for these comments and we have revised the paper as recommended.

Please see annotated pdf for reviewer 1’s comments and helpful suggestions.

R: We thank Reviewer 1 for these comments. The manuscript has been revised accordingly.

Addressing reviewer 2’s point about definition of clinical reasoning and its different steps also highlight a concern of mine: to clarify differences throughout the text between outcomes of clinical reasoning and the process of clinical reasoning. To clarify a bit what I mean: Your primary outcome measure focus on results of clinical reasoning: “detection of clinical deterioration…”, i.e. students' capacity to identify a diagnosis. Your secondary outcome is more related to the process, or learning the process.

R: Thank you for your comments. We have added a definition of clinical reasoning and its different steps in the Introduction section.

Concerning clinical reasoning, our primary outcome measure was the student’s clinical reasoning skills regarding detection of clinical deterioration as measured by script concordance tests (SCTs). The SCTs are case-based tests consisting of short scenarios, and for each the trainee has to interpret newly formulated information against the baseline one to modulate the final decision. An example of SCT is added in Table 1. This final decision could be a diagnosis but also a treatment, an action (prescribe or perform a complementary exam, call for help…). Because the numerous short cases used explore the different types of decision, the SCTs test the skills of clinical deterioration reasoning and not just the diagnosis. We agree that we cannot explore more precisely the process of clinical reasoning skills with SCTs and that is why we also used a self-assessment of the clinical reasoning process. The manuscript has been revised to make it clearer.
Please elaborate and increase the awareness of the differences and the wordings to describe each aspect to the readers. For example, in the beginning of the Discussion section it is unclear what your focus is “…assessed the learning of the clinical reasoning process to detect patient deterioration”. The learning of the CR process? The quality of that process? The accuracy of its outcome?

R: Thank you for your comments. We tested the clinical reasoning skills and process by SCTs and self-assessment. The discussion has been revised in order to make this point clearer.

You mention Levett-Jones’ model “en passant”, that framework could be a good candidate for defining CR and its different steps to readers.

R: We have added the definition of clinical reasoning and its different steps as described by Levett-Jones, in the introduction.

Further aspects to address:

In the background the authors identify weaknesses in previous literature and state neutral results as one of them. Consequently, the present study’s neutral results should be put in perspective (discussed).

R: Thank you for your comments.

The weaknesses in the previous literature and the neutral results (including ours) can probably be explained by the difficulty to assess clinical reasoning, the complexity of education and the need to explore results of changes in the long-term. Development of the clinical reasoning skill is a continuum and the construction of the reasoning process occurs progressively during education. In our study, we explored clinical reasoning only over a short time frame (after the session and one month after) which may explain the absence of visible changes. By contrast, increased satisfaction and motivation when a new pedagogical tool is used could engage the student to learn more, and this could have long-term impact. Active learning is known to increase students’ performance in various scientific domains (Freeman 2014) and this could also be true for simulation by gaming in the medical field.

The discussion has been revised accordingly.

The conclusion summarizes and repeats the results but should instead be taken a step further in making conclusions based on them.
R: The conclusion has been revised accordingly.

Background:

please clarify what is meant by “all clinical reasoning” on page 5, line 107.

Typo: Page 8, Line 175 (simple-blind), should be single-blind

R: The background has been revised accordingly

Kind regards,

Samuel Edelbring

Marie-France Deschenes (Reviewer 1):

This is an excellent scientific manuscript aiming to compare two pedagogical methods for developing clinical reasoning in nursing students, measured by SCTs. The writing of the manuscript is clear, well presented, and rigorously follows the evaluation of the risks of bias when reporting the results of a RCT. It is easy to follow the steps taken by the authors. The article should be accepted with discretionary revisions.

I suggested minor clarifications (see attached document) to enhance some elements of comprehension and editing of the manuscript, especially because I was very interested in the subject. The additional files are relevant and help in understanding the phases of the study.

R: Thank you for your comments which have helped us to improve our manuscript. The manuscript has been revised accordingly.

It might be suggested that you also include an example of a SCT in the text. The tool is not well known in the community of nursing educators.

R: An example of SCT has been added in Table1

I suggest too to standardize the second measurement time after the experiment (one or two months after the first measurement?)

R: Please accept our apologies: the second measurement time after experiment was done one month after (and not two months after). The manuscript has been revised.

Well done!
Carrina Georg, Ph.D (Reviewer 2):

Dear Authors, the manuscript compares the respective value of simulation using serious game with debriefing and traditional teaching method to improve clinical reasoning skills necessary to detect patient deterioration. It is an interesting manuscript about an important topic that needs to be explored. In the age of technology, series games are becoming a frequent used educational modality in nursing education.

R: Thank you for your comments

However, I think the manuscript have some missed points which makes it difficult to interpret the result.

- There is no clear definition of serious game. In line 339 you state that the definition is sometime ambiguous, but you don't define the term.

R: We have added a definition of serious game in the Introduction and Discussion sections.

Also missing a description of game characteristics.

We have added the game characteristics, in this revised manuscript.

- The term Clinical Reasoning is not defined in this study. The term Clinical Reasoning is applied to diverse approaches in different context and in nursing/medicine. In the article you describe that the primary outcome was student’s clinical reasoning skills regarding detection of clinical deterioration measured by script concordance test, and that the secondary outcome was students self assessment of various steps of clinical reasoning. You state that you explore all different steps of clinical reasoning, but missing to describe the different steps/aspects of clinical reasoning. Without a clear definition, is it difficult to interpret the result and follow the discussion.

R: Thank you for your comments. We added a definition of clinical reasoning and its different steps in the Introduction section.
- Objective of this study was to compare the respective value of simulation using serious game with debriefing and a traditional teaching method to improve the clinical reasoning skills necessary to detect patient deterioration. The result shows no significantly difference between the groups regarding SCTs results and self-assessment. The SG group expressed however more satisfaction toward the training session. Given the result, is it difficult to understand the relevance for some parts of the discussion.

R: Discussion has been revised to address these comments.

- Sometime the literature not relevant cited. For instance line: 86 and 89.

R: The manuscript has been revised accordingly.

After some clarification I believe this article will be an excellent addition to the journal